

The charred remains
of lynn breeden



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Introduction

The case being analyzed is 'Charred Remains'. On July 6, 1991, in Vancouver, British Columbia, the contents of a garbage dumpster in a deserted parking lot were set on fire. It was later discovered that the contents were the victim of a murder. Among the ashes were the charred remains of the victim that were burned beyond recognition. The challenge in this case, was to identify both the murder victim and the murderer using very little evidence. The case was determined to be a homicide case once bullet fragments were found in the brain of the victim. The bullet fragments came from a .22 caliber weapon; however, they were so badly damaged they could not be used for ballistic identification, the process of examining bullets and shell casings in order to link a particular firearm to the crime. This case was selected because of the technique used to identify the victim and to generate a DNA profile for the victim. Due to the fact that the remains of the victim were so charred, there seemed to be no way to get a DNA sample. However, Dr. Larry Cheevers, a forensic odontologist, discovered that the jawbone and teeth were still intact even though nothing else was. Tooth enamel is so strong that combined with the protectiveness of the tongue and facial tissues, the teeth can survive extreme circumstances, including extreme heat from a fire. A rare dental condition called Mesiodens, and dental records helped identify the victim. Mesiodens is "an extra tooth which never grew into place on top of the two front teeth inside the gum". The next challenge the homicide detectives faced was matching the blood in the murderer's car to the victim who had no remaining DNA. This seemed impossible until Dr. David Sweet, a forensic odontologist, suggested

something no one had ever thought could be done. He suggested generating a DNA profile using the tooth pulp. This incredible venture was successful, and they were able to generate a DNA profile for Lynn Breeden, the victim. This had never been done before which is what makes this case so fascinating.

Science and Methods Used

The first thing investigators needed to do was identify the victim, however, this was no easy task. Detectives knew immediately that there would not be any fingerprints due to the condition of the body. During the autopsy, Dr. Laurel Gray, the medical examiner, could find no recognizable skin, however, she was able to find a patch of reddish-blond hair that had not been destroyed in the fire. Normally, an attempt would be made to analyze the characteristics and DNA present in the hair, however, the fire had destroyed all of the hair follicles, so there was nothing left to use for DNA testing. Generally, hair can reveal ethnic characteristics, colour, and dyes or treatments. Further examination showed metal pieces in the brain of the victim as well as a fractured skull. These are indications of bullet wounds. However, the fragments were so badly damaged that they could not be analyzed by the firearms unit in order to see exactly which weapon was involved in the crime. When the remains of the body were examined, blood was found in the sinus cavities, which meant blood was still circulating when the victim was shot. However, there were no signs of smoke inhalation in the victim's lungs, which meant that the victim was dead before the fire. Unfortunately, the heat of the fire had altered the victim's blood chemistry,

rendering DNA analysis of the blood impossible. Further examination of the inner organs of the victim revealed the victim to be an adult female.

By studying the growth pattern of the teeth and skull, a forensic odontologist, Dr. Larry Cheevers estimated that the victim was between 24 to 30 years old. A forensic odontologist is a dental specialist who uses his knowledge in application to law. This includes identifying human remains through analysis of dental work. A further look at x-rays told Dr. Cheevers that the victim had a rare dental condition, Mesiodens, and a lot of dental work. When police looked through recent missing persons reports, the one for 30-year-old Lynn Breeden caught their attention. She had blonde hair and her dental records matched those of the charred remains. Now that police knew the identity of the victim, they had to identify the murderer.

Police were able to follow the trail of events to Chris Cruz, a model and student at the University of British Columbia, who also goes by the stage name of Tony Devons. Police connected Chris Cruz to a woman who tried to pose as Lynn Breeden and withdraw her money from the bank. When police questioned him, they received permission to search his car. There was blood on the outside of the car as well as on the inside. His spare tire, clothing, photo album, and tire iron were covered with blood. They also discovered a .22 caliber rifle, a 5-gallon gas tank, and the suit jacket he was seen wearing the night Lynn was murdered. However, police had no way of knowing who the blood belonged to. There was a lot of circumstantial evidence, but it was not enough. All hope of DNA profiling seemed lost, until Dr. David Sweet, a forensic odontologist who had been following the case, suggested to harvest DNA from the tooth pulp in order to generate a DNA profile.

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In order to do this, the pulp was extracted from the tooth and sent to the forensics lab, along with blood samples from Cruz's car. Blood cells were then extracted from the tooth pulp and treated with a "special chemical cocktail". This allowed the DNA to separate from the pulp in a clump of complex molecules. Next, the DNA was put through the electrophoretic process. Electrophoresis is when particles are suspended in a solution or in a gel and the solution is subjected to an electric current. The particles are visualized on an autoradiogram, an x-ray film, "which resembles a barcode". And this is what forensic scientists did to the DNA from the tooth pulp. The DNA was "cut into smaller pieces, marked with a radioactive dye, and placed in separate lanes on an electrophoretic gel, where it was subjected to an electric field." Scientists were then able to generate a DNA profile for Lynn Breeden. They then compared it to the blood from Cruz's car, and it was a perfect match. They had enough forensic evidence to charge Chris Cruz with the murder of Lynn Breeden. In this case, the method used for DNA profiling and the dental analysis worked extremely well. However, there are possible issues with these methods. For example, if the dental records have not been updated with recent dental work, or if the condition of the teeth were affected due to trauma.

Societal Impacts and Legal Ramifications

Right at the end of the video, "Charred Remains", homicide detective Rick Crook says, "if you take away the drugs, I don't believe any of this would have happened." Essentially, cocaine was the start of the end. Both Lynn Breeden and Chris Cruz were using cocaine. Cocaine is an extremely addictive drug, made from the leaves of the *Erythroxylon coca*. Long ago,

cocaine was even used as a painkiller. Cocaine is a Schedule II drug and takes the appearance of a fine, white powder. Drug abuse has become a major issue in society. The rates of drug overdose deaths have continued to increase. According to the graph on the left, there has been a dramatic increase in drug use within the last decade. In this case, witnesses said that Lynn was looking for cocaine that night. Both Lynn and Chris reportedly shared an appetite for cocaine. They both left an after-hours nightclub together. Some sort of argument took place, perhaps about payment for drugs. As they drove, the argument intensified. Police believe that Chris stopped the car, and things became violent. It is believed that Chris used a tire iron to strike Lynn on the head and face in a fit of rage. Then he grabbed his rifle and shot her in the head multiple times. He then drove with the body to the parking lot, where he dumped the body and set the fire using the gasoline container in his car. Drugs can have a terrible influence on the judgement and behavior of those using them. This case was no exception. The end result was that Lynn Breeden was murdered and Chris Cruz had a sentence of life in prison.

Nevertheless, while the ramifications of the case were horrible, the forensic discoveries in this case were extremely important to forensic odontology. Until this case, DNA profiling had never been attempted using pulp from teeth. This was a major discovery for forensic odontology as few believed it could be done. Since then, this method of DNA identification has become much more common.

Conclusion

In conclusion, 'Charred Remains', the case of Lynn Breeden and Chris Cruz was an incredible breakthrough in the field of forensic odontology due to the discovery of using teeth to create a DNA profile. Dental records and DNA profiling using teeth have helped forensic scientists and detectives in identifying people in numerous cases over the years. Working with the charred remains in this case was very difficult, due to there being very little evidence to work with. However, investigators were successful in apprehending the murderer due to the perseverance of forensic experts.